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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Basell USA Inc.
Delaware Corporate Center II
2 Righter Parkway, Suite #300
Wilmington, DE 19803

EXAMINER	
MOHADDES, LADAN	
ART UNIT	PAPER NUMBER
4151	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,662	BRITA ET AL.	
	Examiner	Art Unit	
	LADAN MOHADDES	4151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-22* is/are rejected.

7)☒ Claim(s) *21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/27/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

   i. Page 1, line 18-19, "...describes the use of certain porous polymers as a (i) support for a (iii) transition metal metallocene compound and a (ii) alumoxane activator" is suggested to change to -- ... describes the use of certain porous polymers as a (i) support for a (ii) transition metal metallocene compound and a (iii) alumoxane activator--.

   ii. Page 8, line 21, "40% cm^3/g" should read --40%--.

   Appropriate correction is required.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Page 9, formula (III), "A" in the formula is not defined and therefore there is no antecedent basis for substituent "A" in the specification.

Claim Objections

3. Claim 21 is objected to because of the following informalities:

   iii. "(a) ... higher than 40% cm^3/g" should read -- (a) ... higher than 40% --.

   Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

   The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22 contains formula **(III)** wherein the element "A" in the formula is not defined and therefore there is no antecedent basis for substituent "A" in any of the proceeding claims. For the purpose of the prior art rejection below, alternative formulas (I) and (II) were used.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 12, 13, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sacchetti et al. (WO 01/85803, already of record).

8. Regarding claim 12, Saccetti et al. discloses a process for the preparation of a porous ethylene polymer comprising: prepolymerizing propylene in the presence of a Mg, Ti, and halogen containing solid catalyst component (Abstract, ln 3) having a porosity, measured by the mercury method set forth in the description is in the range of 0.3-1.5 cm^3/g which is higher than 0.25 cm^3/g (page 6, ln 22-24 and page 12, ln 23) wherein 3.2 g (within the range of 0.1 to 15 g) of propylene pre-polymer per g of solid catalyst component is produced (page 13, ln 6); and

-polymerizing ethylene in the presence of the propylene pre-polymer with 1.3 kg of ethylene polymer per g of propylene pre-polymer (in the range of 10 g to 2.5 kg) (page 13, ln 9-14, please note that 6.5 kg of ethylene per g of the catalyst is converted to 1.3 kg of ethylene per g of propylene pre-polymer considering that the example discloses 0.039 g of propylene pre-polymer contains 0.0078 g of the catalyst).

9. Regarding claim 13, Saccetti et al. discloses a process wherein propylene pre-polymer produced is 3.2 g (page 13, ln 6) which is in the range of 0.3 to 10 g per g of catalyst component.

10. Regarding claim 15, Saccetti et al. discloses a solid catalyst component which comprises a titanium compound supported on a magnesium dihalide (claim 4).

11. Regarding claim 16, Saccetti et al. discloses a solid catalyst component that has pores having a radius up to 1 μ, and the solid catalyst component has a porosity higher than 0.3 cm^3/g measured by a mercury method (claim 8, please note that 10000 Å = 1 μ).

12. Regarding claim 17, Saccetti et al. discloses a solid catalyst component which is non-stereospecific (claim 1, ln 3).

13. Claims 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Tabaksblat et al. (US 6,051,618).

14. Regarding claim 18, Tabaksblat et al. discloses a porous polyethylene (col 8, ln 23) with total porosity, expressed as in cm^3/g is 1.87 (col 8, ln 24) (which is higher than the range 0.5-1.4 cm^3/g defined in page 8, ln 11-12 of the specification and reads on

higher than 40%), wherein the porosity is due to pores having a radius of 0.6-2.2 μm (up to 10 μm) (col 8, ln 25).

15. Regarding claim 19, Tabaksblat et al. discloses a porous polyethylene (col 8, ln 23) with total porosity, expressed as cm^3/g is 1.87 (col 8, ln 24) which is higher than the range 0.5-1.4 cm^3/g defined in page 8, ln 11-12 of the specification and reads on higher than 50% wherein the porosity is due to pores having a radius of 0.6-2.2 μm (up to 10 μm) (col 8, ln 25).

16. Claims 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Takita et al. (US 6,245,272).

17. Regarding claim 18, Takita et al. discloses a polyethylene (col 3, ln 25) with total porosity 45-95% (col 4, ln 2) which is higher than 40%, wherein the porosity is due to the pores having radius of 0.005-0.05 μm (col 4, ln 2) (up to 10 μm).

18. Regarding claim 20, Takita et al. discloses a polyolefin which is ethylene polymer (col 3, ln 25), wherein the ethylene polymer has pores with 0.005-0.05 μm radius (up to 1 μm) (col 4, ln 45, please note the diameter of the pore (0.01-0.1 μm) is given in the reference), and the pores with 0.005-0.05 μm radius comprises from 45-95% of the total porosity of the ethylene polymer (which reads on 25 to 70%) (col 4, ln 2).

19. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Galimberti et al. (WO 0018812).

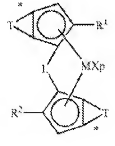
20. Galimberti et al. discloses a catalyst system comprising: a) an ethylene polymer having a porosity (page 6, ln 21) expressed as cm^3/g, from 0.04 to 1.4 cm^3/g (which reads on the range 0.5-1.4 cm^3/g defined in page 8, ln 11-12 of the specification and

reads on higher than 40% (the pore radius is up to 1 μm)); (b) organonickel compound (page 2, ln 11-20) or organic cobalt compounds (page 2, ln 21-22) which are transition metal organometallic compound; and (c) an alumoxane (page 8, ln 29 to page 9, ln1-3).

21. Claims 21-22 is rejected under 35 U.S.C. 102(e) as being anticipated by Resconi et al. (US 6,051,618).

22. Regarding claim 21, Resconi et al. discloses a catalyst system comprising: a) organic porous polymer (page 3, paragraph [0039-0040]) (which can be an ethylene polymer) (page 7, paragraph [0135]) having a porosity expressed in void percentage higher than 40% cm^3/g (page 3, paragraph [0039-0040]); b) transition metal organometallic compound (page 4, paragraph [0052], metallocene is a transition metal organometallic compound); and (c) an alumoxane (page 8, ln 29 to page 9, ln1-3).

23. Regarding claim 22, Resconi et al. discloses a catalyst system wherein the transition metal organometallic compound is a metallocene compound (page 10, claim 18) having formula:



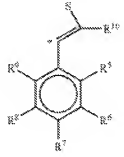
Wherein

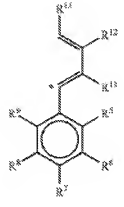
M is a transition metal belonging to group 3, 4, 5, 6 (which includes group 4, 5) or to the lanthanide or actinide groups of the Periodic Table of the Elements (page 12, claim 1);

X, equal to or different from each other, are monoanionic sigma ligands selected from the group consisting of hydrogen, halogen, R, OR, OCOR, SR, NR_2 and PR_2, wherein R is a linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl or C_7-C_{20} arylalkyl (all elements disclosed in page 12, claim 1), optionally containing one or more Si atoms (page 7, paragraphs [0129-0130], note Si in the formula);

p is an integer equal to an oxidation state of M minus 2 (page 12, claim 1);

L is a divalent bridging group selected from a C_1-C_{20} alkylidene, C3-C_{20} cycloalkylidene, C_6-C_{20} arylidene, C_7-C_{20} alkylarylidene, or C_7-C_{20} arylalkylidene radical optionally containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements, and a silylidene radical containing up to 5 silicon atoms (page 12, claim 1); equal or different from each other, is a moiety of the either formula below:





Wherein,

R^5,R^6, R^7, R^8, and R^9 (which reads on R^1,R^2, R^3, R^4, and R^5) equal to or different from each other, and are hydrogen, halogens, or linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl, or C_7-C_{20} arylalkyl radicals, optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements; or two adjacent R^5,R^6, R^7, R^8, and R^9 (which reads on R^1,R^2, R^3, R^4, and R^5) form at least one 3-7 membered ring optional containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements (all elements disclosed in page 12, claim 1).

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

25. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

26. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

27. Claim 14 is rejected under 35 U.S.C. 103(a) as being obvious over Saccetti et al. (WO 01/85803, already of record).

28. Regarding claim 14, Saccetti et al. remains as applied to claim 12, and further discloses a process for the preparation of a porous ethylene polymer, wherein 1.3 kg of ethylene polymer is produced per g of propylene pre-polymer (in the range of 10 g to 2.5 kg) (page 13, ln 9-14, please note that 6.5 kg of ethylene per g of the catalyst is converted to 1.3 kg of ethylene per g of propylene pre-polymer considering that the example discloses 0.039 g of propylene pre-polymer contains 0.0078 g of the catalyst).

29. Saccetti et al. does not expressly disclose that the amount of the ethylene polymer produced is less than 1 kg per g of the propylene pre-polymer. However, depending on the kinetics of the ethylene polymerization it is well within the choice of the practitioner to provide any amount of polyethylene per g of propylene by changing polymerization time, temperature, amount of prepolymerized catalyst, the ratio of propylene to solid catalyst or combination of the above. Therefore, it would have been obvious to the person of the ordinary skill in the art to produce polyethylene of Saccetti et al. wherein ethylene polymer produced is less than 1 kg per g of the propylene pre-polymer as such is within the practitioners choice to produce the desired amount.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LADAN MOHADDES whose telephone number is (571)270-7742. The examiner can normally be reached on Monday to Thursday from 8:30 AM to 6:00 PM and every other Friday from 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Ortiz can be reached on (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LM/

/Angela Ortiz/
Supervisory Patent Examiner, Art Unit 4151